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Salomon

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[54] **DEVICE FOR MOUNTING A BRAKE ON A SKI**

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[51] **Int. Cl.²** **A63C 7/10**

[58] **Field of Search** ..... 280/11.13 C, 11.13 D, 280/11.13 B, 11.13 Z, 11.13 Y, 11.13 G, 11.35 C, 11.35 H; 210/605, 504, 633

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[57] **ABSTRACT**

A device for mounting a brake on a ski having a safety fastening comprising a longitudinal slide bar attached to the ski comprises a brake element slidably mounted on the slide bar. The brake element is secured in place and is so fitted that it cannot be detached from the slide bar in the transverse direction.

6 Claims, 5 Drawing Figures

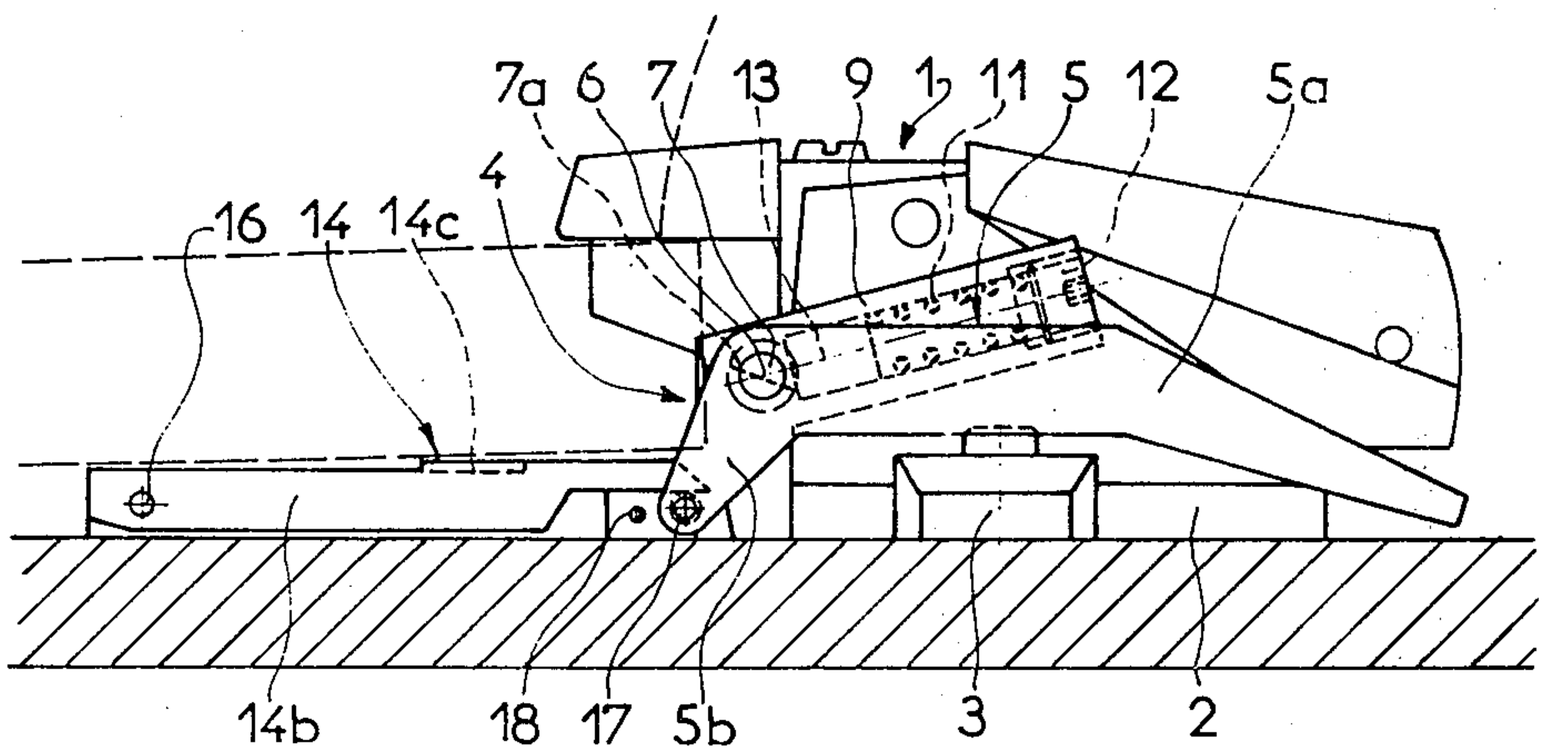
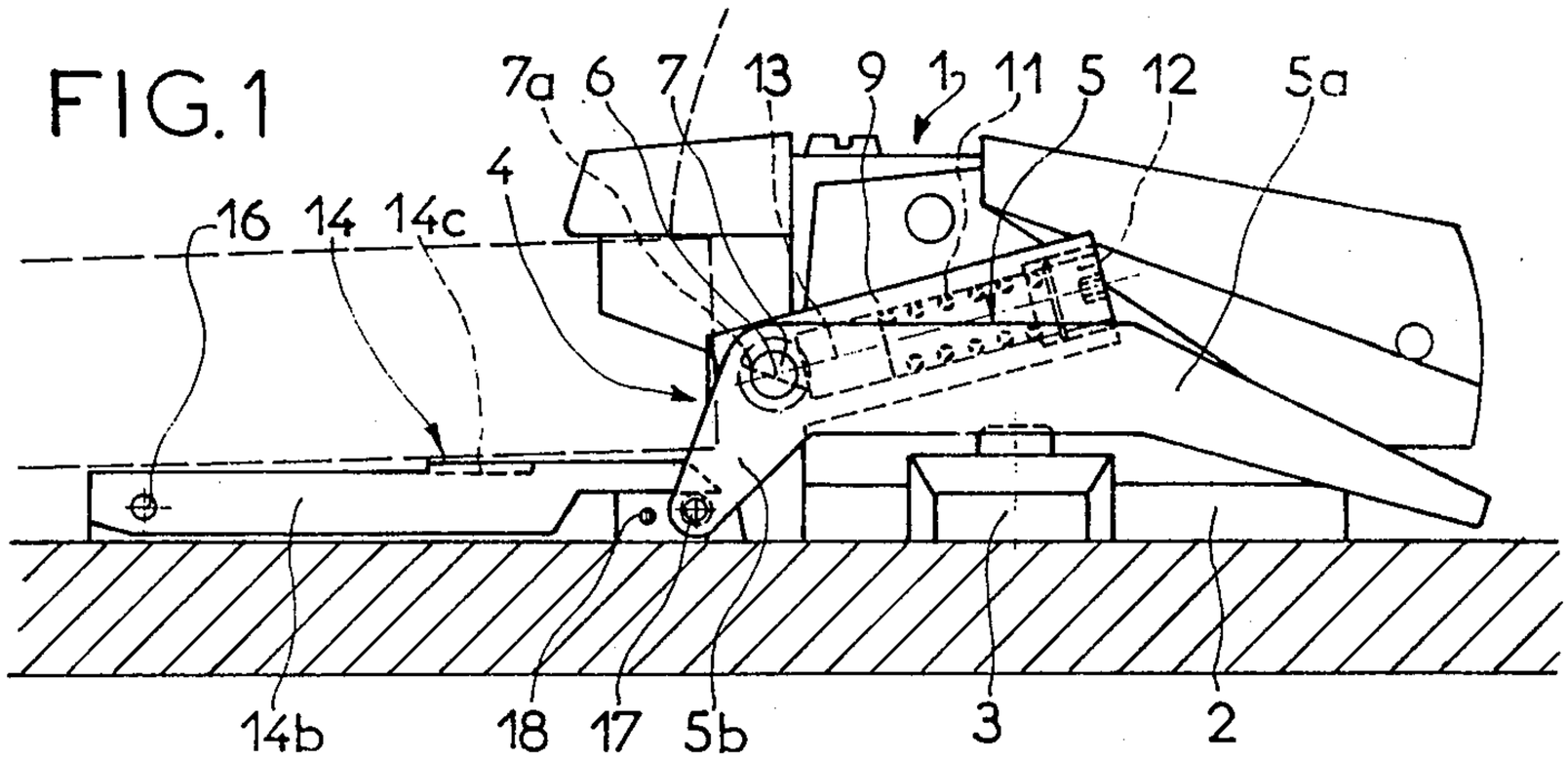


FIG. 1



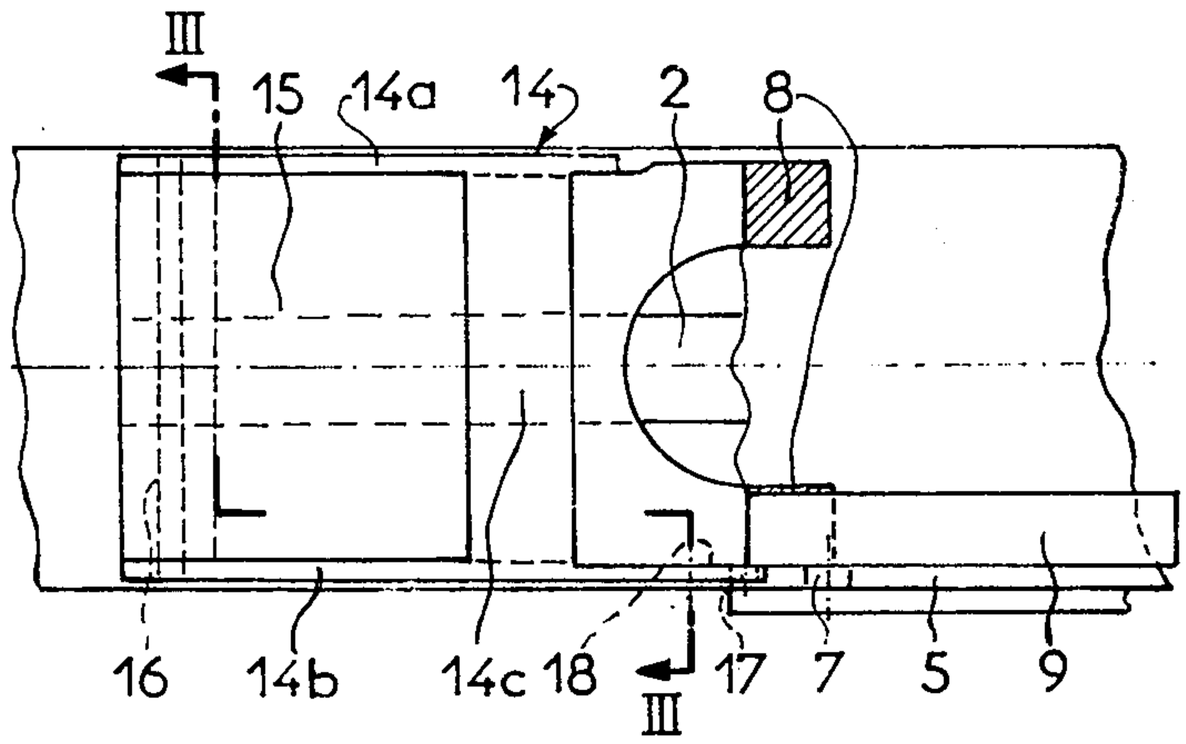


FIG. 2

FIG. 4

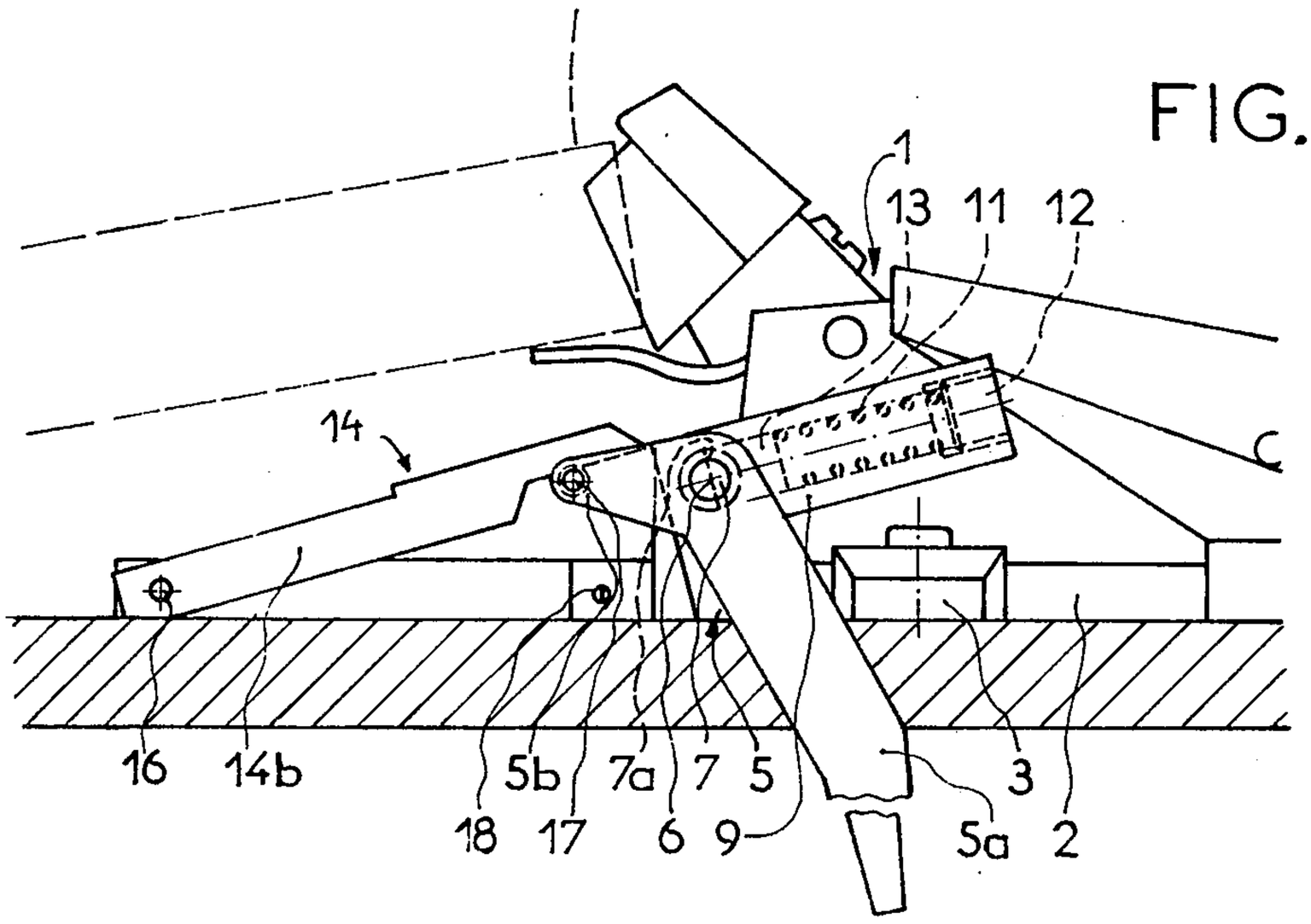


FIG. 3

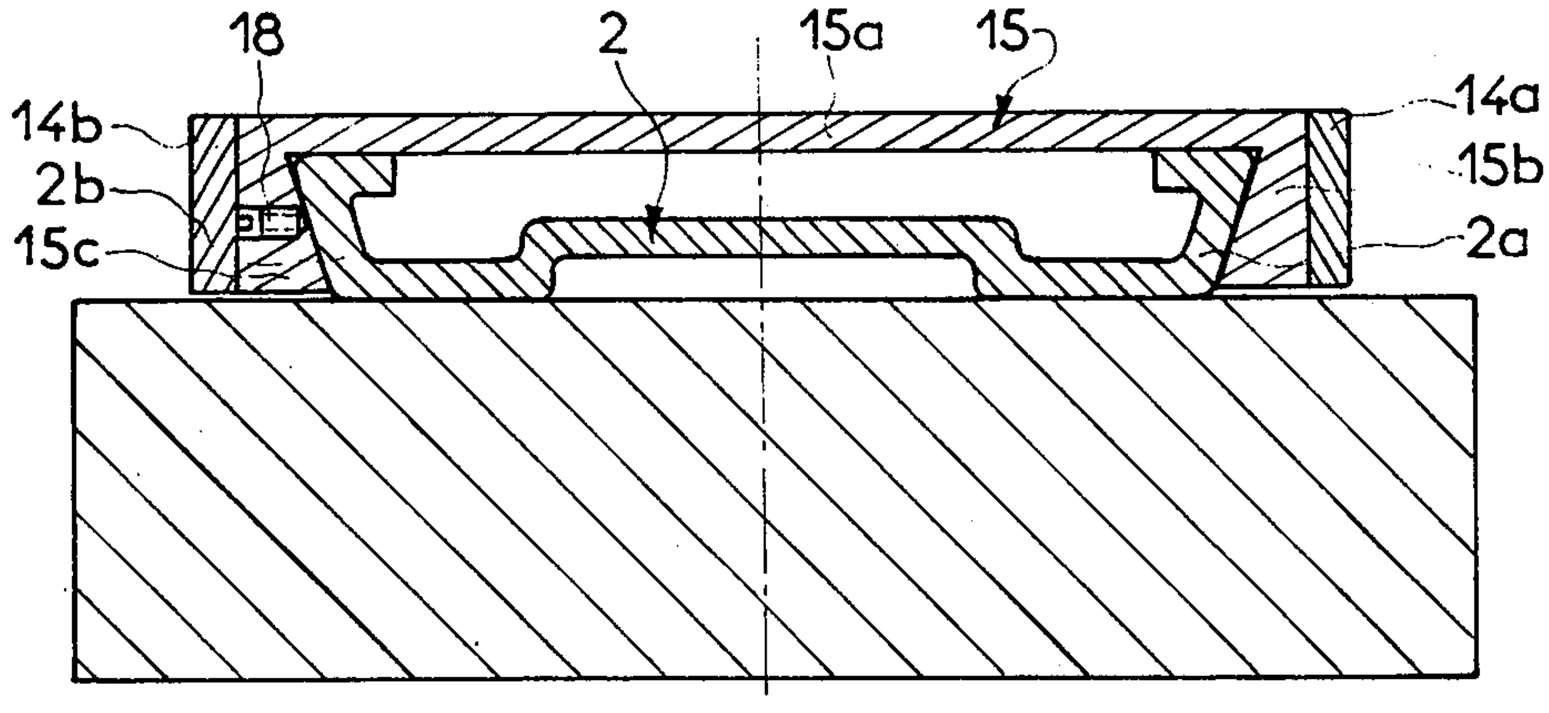
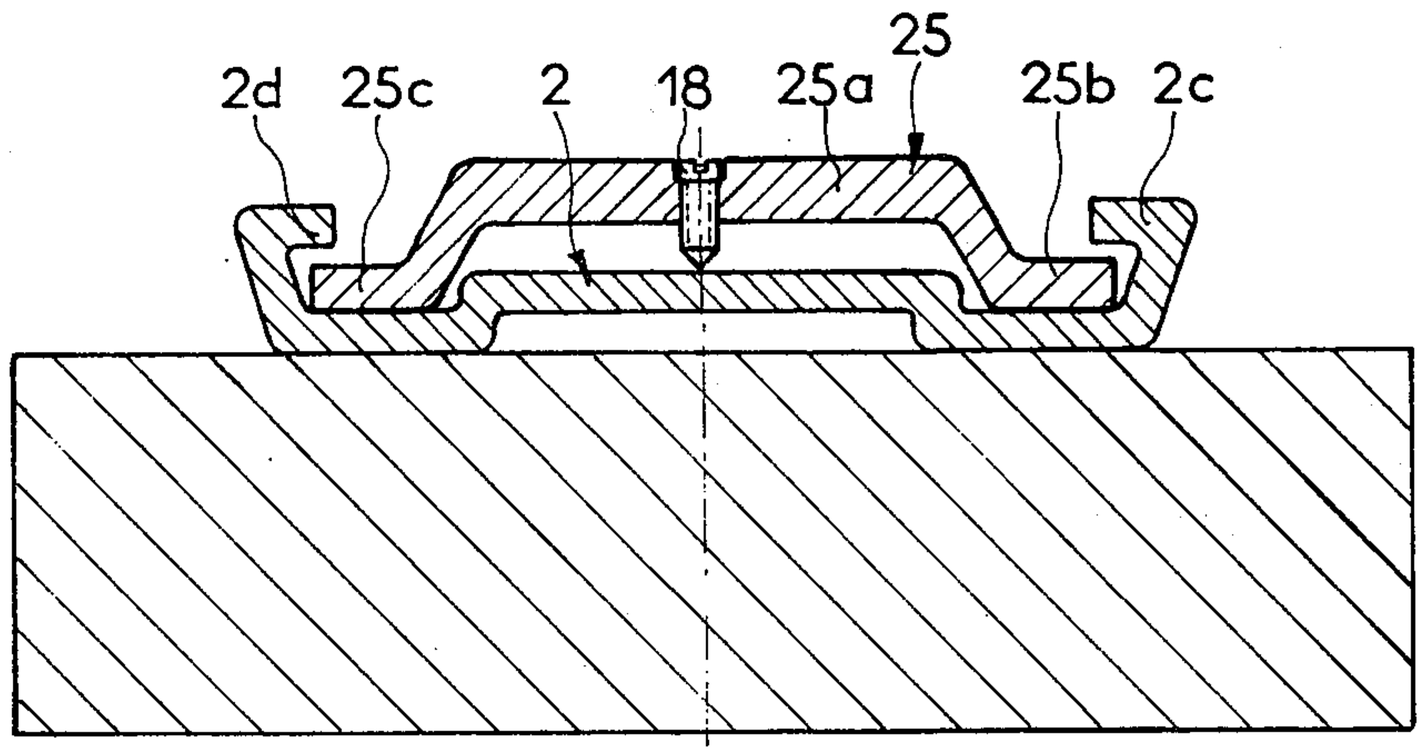


FIG. 5



DEVICE FOR MOUNTING A BRAKE ON A SKI

BACKGROUND OF THE INVENTION

The present invention relates to a device for mounting a brake on a ski having a safety fastening.

Various ski brakes are already known of which the function is to immobilize the ski when, following a fall which actuates the safety fastening, the ski comes off the user's ski-ing boot.

Up to the present the brakes mounted on skis have been independent of the fastening and separately mounted. This involves the drawback that additional holes have to be bored in the ski in order to mount the brake, besides which the position of the later is permanently fixed, whatever the length of the boot.

A first attempt has been made to remedy this drawback by mounting the brake on the fastening itself. This makes it unnecessary to bore additional holes in the ski; the brake is also satisfactorily positioned at all times in relation to boots of different lengths when the fastening to which it is affixed is removed. The known method of mounting the brake on the fastening nevertheless entails certain disadvantages, the actual operation of mounting it thereon being cumbersome, besides necessitating the additional machining of the fastening beforehand so that it can accommodate the screws by which the brake is secured.

SUMMARY OF THE INVENTION

The main purpose of the present invention is to eliminate these drawbacks.

For this purpose, this device for mounting a brake on a ski having a safety fastening comprising a longitudinal slide bar attached to the ski is characterized by the fact that it comprises a brake element slidably mounted on the slide bar of the fastening and fitted onto this slide bar so that it cannot become detached therefrom transversally, and also means for securing the brake element on the slide bar.

The invention provides a very convenient means of mounting the brake on the fastening. The fact is that the brake merely has to be attached longitudinally to the actual fastening affixed to the ski after which the brake is secured in position on the slide bar, e.g. by means of a simple screw. This mounting device makes it unnecessary to machine the fastening in advance, as it makes use of an existing element of this latter, i.e. the slide bar serving for longitudinal adjustment and not modified. It also enables the longitudinal position of the brake in relation to the fastening to be regulated as desired. Finally, the brake is guided on the slide bar over a considerable length, being thus rendered firmer.

BRIEF DESCRIPTION OF THE DRAWING

An embodiment of the present invention will be described below, by way of an example, without any limitative effect, and by reference to the accompanying drawing, in which:

FIG. **1** is a fragmentary elevation view of a rear fastening mounted on a ski and having a ski brake attached to it, the brake being in the inoperative position.

FIG. **2** is a fragmentary plan view showing the mounting of the brake, the fastening being assumed to have been removed.

FIG. **3** is a cross section view along the section line III—III of FIG. **2.**

FIG. **4** is a fragmentary elevation view similar to that of FIG. **1,** the brake being shown in the operative braking position.

FIG. **5** is a cross section view showing an alternative method of connection between the brake and the slide bar of the fastening.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIGS. **1–4** illustrate a rear safety fastening marked **1** as a whole and adjustably mounted, in a manner known per se, by means of a longitudinal slide bar **2** affixed to a ski, in the appropriate position, by a clamp **3** and by screws not shown in the drawing. A ski brake **4** of any known type is associated with the fastening **1.** This brake may comprise, as in the example shown in the drawing, one or two arms **5** situated at the side and pivoting about a transversal shaft **6.** Each securing arm **5** has the shape of a lever with two branches and comprises a rear branch **5***a* taking the form of a spade, designed to dig itself into the snow, when the brake is in the operative position, and a shorter front branch **5***b*. In the inoperative position (FIG. **1**) the rear branch **5***a* extends in a substantially horizontal direction towards the rear, while the front branch **5***b* is inclined downwards and forwards.

Each arm **5** is integral with a pivot **7** rotatably mounted in a bearing provided in a vertical column **8** integral with the rear part of a heel piece **15** supporting the brake. This column has a prolongation extending upwards and backwards and consisting of a sleeve **9** inside which is mounted a compression spring **11** which may rest by its outer end on a calibration plug **12** screwed into the internally threaded end part of the sleeve **9.** The spring **11** likewise rests by its internal end on a piston **13** or any component serving a similar purpose (ball etc.).

The bearing in which the pivot **7** turns leads into the internal cavity of the sleeve **9,** in which position the pivot **7** has a diametric supporting surface **7***a* against which the piston **13** is pressed by the force of the spring **11.**

The ski brake also comprises a "re-shoeing pedal" **14** of which the front part is articulated to the heel piece **15** in such a way as to be rotatable about a transversal shaft **16.** The pedal **14** consists essentially of two vertical lateral branches **14***a* and **14***b* of which the front ends are articulated to the shaft **16** and of which the respective rear parts are interconnected by a transversal bar **14***c* on which the heel of the ski boot is supported. The branches **14***a* and **14***b* are prolonged towards the rear, their extreme rear parts being situated above transversal lugs **17** extending in the direction of the longitudinal axis and borne by the front branches **5***b* of the arms **5.** The pedal **14** thus rests permanently on the lugs **17** and acts on the arms **5.**

According to the invention the heel piece **15** which belongs to the brake and to which the "re-shoeing pedal" **14** is articulated forms a "link block" engaging the longitudinal slide **2** of the fastening **1** and fitting onto this latter in such a way that it cannot become detached transversally and particularly upwards. For this purpose the heel piece **15** and the slide **2** have complementary cross sectional profiles preventing them from coming apart.

This transversal interconnection can be provided in a number of different ways. For example, as shown in FIG. **3,** the slide **2** and the heel piece **15** are assembled

on the dovetail principle. For this purpose the heel piece **15** has a horizontal upper web **15***a* extending downwards in the form of two side flanges **15***b* and **15***c* forming a dovetail assembly with the flanges **2***a* and **2***b* of the slide bar **2.** In this case the flanges **15***b* and **15***c* are situated outside the flanges **2***a* and **2***b* of the slide bar **2** and consequently enclose these latter.

The flanges of the slide bar **2** could also be provided with longitudinal ribs (or grooves) interacting with the longitudinal grooves (or ribs, respectively) provided on the heel piece **15** and corresponding thereto.

In the alternative embodiment shown in FIG. **5** the heel piece **25** has a horizontal upper web **25***a* of which the two longitudinal sides extend downwards in the form of flanges which are first inclined at an angle and which terminate in horizontal extremities **25***b* and **25***c* extending outwards. These extremities engage grooves of hook-shaped cross section turned inwards and forming the extremities **2***c* and **2***d* of the flanges **2***a* and **2***b* of the slide bar **2.**

The heel piece **15** and the slide bar **2** could naturally be fitted together by any other method.

The heel piece **15** is secured in position on the slide bar **2** by any suitable means, e.g. by the aid of a simple set screw **18** inserted in an internally threaded hole provided in one of the flanges **15***c* of the heel piece **15,** its end coming to rest against the external surface of the flange **2***b* belonging to the slide bar **2** and situated opposite to it (FIG. **3**).

The set screw **18** can also be screwed into the web of the heel piece, in which case it is vertical. This arrangement is illustrated in FIG. **5,** where it may be seen that the screw **18** is screwed into the web **25***a* of the heel piece **15** and is supported by its end on the central part of the slide bar **2.** The screw **18** can also pass through a non-threaded hole provided in the heel piece **15** and be screwed into a threaded hole provided in the slide bar **2.**

It may be seen from the foregoing that the ski brake **4** is mounted on the ski in a very simple manner: the fact is that the entire ski brake unit **4** need only be attached to the slide bar **2** on the left as viewed in the drawing. The heel piece **15** is then moved over the slide bar **2** from the left towards the right until the brake occupies the correct position. At this moment all that is required is to secure it in position by means of the screw **18,** this operation being a very simple and rapid one. It also makes it unnecessary to bore any additional holes in the ski.

The position of the ski brake in relation to the fastening **1** may be selected as desired. When the said fastening is moved in order to adapt it to ski boots of different lengths, the ski brake **4,** of which the heel piece **15** is integral with the slide bar **2,** follows the movement.

As the heel piece **15** is guided by the slide bar **2** over practically its entire length, the ski brake is extremely firm on the slide bar and consequently on the ski itself.

When the safety device comes into operation and the ski is detached from the boot the ski brake **4** pivots from its inoperative position shown in FIG. **1** to its operative position shown in FIG. **4.** The fact is that when the heel of the ski boot leaves the "re-shoeing pedal" **14,** the spring **15** which thrusts the piston **13** forwards causes the pivot **7** to rotate clockwise until the piston **13** comes to rest against the diametral surface **7***a* (FIG. **4**). This results in a corresponding pivoting movement of the arm **5,** and the rear branch **5***a* of this

latter extends under the heel of the ski and is thus able to enter the snow.

When the user puts his ski on again the action of the heel of his ski boot on the pedal **14** causes the arm **5** to perform the opposite movement, thus returning to its retracted inoperative position (FIG. **1**).

The mounting device according to the invention can be applied to any type of make at present known.

In one embodiment the arm **5** can pivot about a fixed swivel pin borne by the column **8** integral with the link block forming the heel piece **15,** the arm **5** being returned to its operative braking position by a spring attached both to this arm, at a point situated between the pivoting axis **6** and the extremity of the rear branch **5***a*, and also at a point on the heel piece **15,** so that this spring always tends to pivot the arm **5** clockwise. The pedal **14** can be eliminated and replaced by a simple rod interconnecting the ends of the front branches **5***b* of the arms **5.**

I claim:

1. For use with a ski binding having a slide bar extending longitudinally of the ski and mounted in a fixed position in use on the ski, a ski brake comprising a heel plate having coupling means for slidably engaging said slide bar longitudinally of the ski for removably coupling and fixing said ski brake thereon without movement transverse of said slide bar, means on said heel plate to releasably fix said heel plate axially on said slide bar, said heel plate having pivotally mounted thereon at least one brake lever, means on said heel plate pivotally mounting said brake lever, biasing means constantly biasing said brake to an operative position for braking a ski when mounted thereon, pedal means pivotally mounted on a forward end of said heel plate extending toward a rear end of said ski in use and having means cooperative with said brake lever for actuating said brake lever to a retracted position and for rendering said biasing means ineffective when said pedal is pressed in a direction downwardly toward said ski with a predetermined pressure overcoming said biasing means.

2. For use with a ski binding having a slide bar extending longitudinally of the ski and mounted in a fixed position, a ski brake according to claim **1,** in which said coupling means for slidably engaging said slide bar comprises means for making a dovetail connection with said slide bar.

3. For use with a ski binding having a slide bar extending longitudinally of the ski and mounted in a fixed position, a ski brake according to claim **1,** in which said slide bar has surfaces defining a channel and flanges extending inwardly toward said channel, said heel plate coupling means comprising lateral flanges slidable in said channel and underlying said flanges on said slide bar when said heel plate is slid axially into said channel.

4. For use with a ski binding having a slide bar extending longitudinally of the ski and mounted in a fixed position in use on a ski, a ski brake according to claim **1,** in which said means pivotally mounting said brake lever comprises a column integral with said heel plate, and a pivot on said column.

5. For use with a ski binding having a slide bar extending longitudinally of the ski and mounted in a fixed position in use on a ski, a ski brake according to claim **1,** in which said pedal means comprises a lever extending toward said brake lever and coactive therewith.

6. For use with a ski binding having a slide bar extending longitudinally of a ski and mounted in a fixed

position in use on the ski, a ski brake according to claim 1, and including a second pivotally mounted brake lever spaced from the first-mentioned brake lever, both brake levers being disposed in use on opposite sides of the ski, second biasing means biasing said second brake lever to an operative position for braking said ski, and second pedal means pivotally mounted on a forward end of said heel plate extending toward a rear

end of said ski in use and having means cooperative with said second brake lever for actuating said second brake lever to a retracted position and for rendering said second biasing means ineffective when said second pedal means is pressed in a direction downwardly toward said ski with a predetermined pressure overcoming said second biasing means.

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